UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/817,797	03/27/2001	Michael Hermann	741124-79	8356

22204 7590 03/30/2005

NIXON PEABODY, LLP
401 9TH STREET, NW
SUITE 900
WASHINGTON, DC 20004-2128

EXAMINER	
CHANG, AUDREY Y	

ART UNIT	PAPER NUMBER
2872	

DATE MAILED: 03/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	09/817,797	HERMANN, MICHAEL	
	Examiner	Art Unit	
	Audrey Y. Chang	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 August 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3 and 4* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3 and 4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 10, 2004 has been entered.

This Office Action is in response to applicant's amendment filed on August 10, 2004, which has been entered into the file.

2. By this amendment, the applicant has canceled claim 2 and has amended claim 3.

3. Claims 1 and 3-4 remain pending in this application.

4. The double patenting rejection set forth in the previous Office Action is withdrawn in response to the abandonment of the co-pending application 10/253,698.

Response to Amendment

5. The **declaration** filed on **January 7, 2005** under 37 CFR 1.131 has been considered but is ineffective to overcome the **Holzl** reference, (PN. 5,026,998). The declaration *fails* to teach why would the device recited in the claims of the instant application is *workable* and the declaration *fails* to show the *true novelty* of having a reflected mode as compared to have a transmission mode.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. **Claims 1 and 3-4 are rejected under 35 U.S.C. 112, first paragraph**, as based on a disclosure which is **not enabling**. The *specific* output signals from each sensors and the specific information concerning the light source, (such as either the measurement of pulse time of the light travels to each sensor or the specific distance set for the light source means to each of the sensors) are *critical* or *essential* to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). At this juncture, the specification and the claims **only teach** to have the **both** of the *sensors* connected to the second element, and having the light *reflected* from the first sensor to the second sensor, (both one the second element), but no relative information is given concerning each signal from the sensor to the light source means, which is connected to the first element. To the most, the two sensors only have information to determine the relative position between the two **sensors** but **not the two elements**. It is not clear how can the "relative position" of the *light source means "relative to the incidences of the at least one light beam on the surfaces of the two-dimensional readable optoelectronic sensors*", be determined. There is *not enough information* for doing so. The specification and the claims **fail** to teach if pulse time measurement for the light travels between the light source means (*to and back from*) the incidence surfaces of each sensor is used to determined the relative distance or a *fixed* distance is **predeterminedly set** between the light source means and each sensor so the relative distance is a *constant* value in the calculation process. A two-dimensional readable optoelectronic sensor is like a *camera* it can only register the *point* that the light strikes the sensor, the information of the point cannot be enough to determine the relative position between the light source means and the sensor, in particular the relative distance certainly cannot be determined by a point. Furthermore, the specification and the claims **fail** to teach by having the light reflected from the first sensor to the second sensor, which are both on the second element, (that to the most give relative positional information between the two sensors on the second element), will give information to

determine the relative position between the first *element* and the second *element*. This process is like by measuring the length of the sofa will not tell you how *far* the sofa is located from the door or where is the sofa relative to the door. The claims therefore **fail** to provide workable devices.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1 and 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Holzl (PN. 5,026,998) in view of applicant admitted prior art.

Holzl teaches an *alignment measurement mechanism* for measuring the relative positions between *two shafts* (1 and 2), *serves as the two elements*, wherein the mechanism comprises a *light source* (8) for generating a light beam (s) that incidents on a first and second *optoelectronic detectors* (9 and 10, Figures 2 and 3) that are connected to the second shaft (2). The two optoelectronic detectors are two-dimensional readable sensors that each generates two dimensional position signals as shown in Figure 2. Holzl further teaches that *a data converter* (3) and a *computer* (4), serve as the *electronic means and computer*, are included for processing the detected positional signal of the detectors to measure the relative position of the two shafts. The two dimensional position signals generated by each of the position detector are corresponding to the **incident points** of the light on the surface of each of the detectors. The calculating electronics for computing the relative positions from the detected signals are implicitly included to determine the relative positions. It is implicitly true that only portion of the light incident on the first optoelectronic detector will reach the second optoelectronic detector.

This reference has met all the limitations of the claim with the exception that it does not teach explicitly the arrangement of having the light incidents on the first detector is *reflected instead of transmitted* to the second detector. However it is implicitly true that whether the light incident on the second detector is reflected or transmitted from the first detector the **operational principle** for obtaining the relative position between the two shafts or elements do not change. Since the principle is based on calculating the positional signals detected by the two detectors about the incident points of the light on the two detectors, the modification or the difference, concerning either reflecting or transmitting light from one detector to the other detector, does not change the function of detecting and calculating the relative positions of the two shafts. This difference is therefore considered as an obvious matter of design choice to one skilled in the art for the benefit of providing different design for the measurement mechanism. Furthermore, **applicant admitted prior art** teaches that a **reflective** type optoelectronic sensor such as CMOS sensor circuit is ***commercially available***, (please see page 5 lines 14-20 of the specification). It would then have been obvious to one skilled in the art to use a reflective type of detector to make the light reflected from the first detector to the second detector for the benefit of providing a more compact system.

With regard to the housing, the references do not teach such explicitly however it would have been obvious to one skilled in the art to use a housing for the detectors for the benefit of blocking out unwanted light to reach the detectors so that the detectors detect the signals more accurately.

Response to Arguments

10. Applicant's arguments filed on October 12, 2004 have been fully considered but they are not persuasive.

11. In response to applicant's arguments concerning the cited Holzl reference, the applicant is respectfully reminded that Holzl does teach to use two optoelectronic detectors, with light beam transmitted from one detector to the other, placed on the second element to provide two sets of positional

signals to calculate the relative positions between the first and second elements. The applicant is respectfully reminded the main issue here is whether the light from the first detector is *transmitted* or *reflected* to the second detector, and the difference DOES NOT amount to a patentably distinction between the cited reference and the instant application, because either way will give a *relative position measurement* between the two sensors or detectors. The reflectivity of the optoelectronic detector, which is commonly known feature in the art, and it does not contribute the base for novelty. The transmission mode and the reflecting mode of position measuring mechanism simply do not possess any patentable difference here. Furthermore, as shown in Figure 2 of Holzl there must be light reflected from the sensor (10) to the sensor (9) since if the sensor is a reflective one, it will definitely happen. Even if the sensors are not reflective ones there is still reflected light from the surface of the sensor (10) to sensor (9) as a result of general optical property. The claims and the applicant's arguments fail to show how the information obtained by the reflection mode is different from the information obtained from the transmission mode and how does this information provide *novel* difference for measuring the relative distance between the two elements.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 571-272-2309. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Audrey Y. Chang
Primary Examiner
Art Unit 2872

A. Chang, Ph.D.